

REMARKS

Applicants appreciate the Examiner's thorough review of the present application, and respectfully request reconsideration in light of the preceding amendments and the following remarks.

Claims 1-2, 5, 7-11 and 13-24 are pending in the application. Claim 1 has been amended to improve claim language. No new matter has been introduced through the foregoing amendments.

The new grounds of rejection relying on *Lemoff* (U.S. Patent No. 6,539,142) and *Espindola* (U.S. Patent No. 6,301,425) are traversed for the following reasons.

Lemoff relates to an optical switch for actively aligning mirrors (see Title and Abstract of *Lemoff*), and *Espindola* relates to an optical variable attenuator (see Title and Abstract of *Espindola*) the references fail to teach or suggest a Wavelength Division Multiplexing (WDM) system as presently claimed.

Lemoff aims to provide tilting mirrors for minimizing optical losses. *Lemoff* discloses fiber optic input/output bundles having input/output ends for receiving/transmitting mixed optical signals, lenses positioned between the input/output bundles and mirrors, and comb-based MEMS actuators actuated by a controller to tilt the mirrors. There is no shutter in *Lemoff*. See Fig. 3 and the corresponding description of *Lemoff*.

Espindola aims to achieve a predetermined amount of loss without a continuous supply power to maintain a particular loss level. *Espindola* discloses two GRIN lenses disposed in spaced-apart relation to define a gap there between, a magnetic shutter positioned within the gap, and a second magnetic component for moving the shutter toward or away from the gap.

However, an object of the present invention is to integrally install an optical signal path to attenuate an optical signal, which is selectively transmitted through a demultiplexer, in order to simplify the structure and assembly process of the entire system. The disclosed embodiments of the present invention has technical features in that a filter is disposed between the dual collimator and the single collimator to selectively transmit a specific optical signal of a

wavelength corresponding to the peak wavelength of the filter, and in that an air gap is formed between the filter and the single collimator. Furthermore, a shutter member is provided to attenuate the specific wavelength optical signal outputted from the filter. Lemoff or Espindola do not teach or suggest the above features of the disclosed embodiments of the present invention.

The following errors are also found in the Examiner's action.

1. With respect to independent claim 1, the Examiner is kindly asked to explain how *Lemoff* teaches the claim limitation of a lens positioned downstream of said filter. The cited passage at column 7, lines 53-58 is completely silent on the relative position of the filter and lens 51b.

2. Still with respect to independent claim 1, Applicants respectfully submit that *Lemoff* does not teach or disclose any shutter member. The Examiner's argument found in page 3, lines 1-3 of the Office Action is noted. Applicants respectfully disagree with the Examiner, because the *Lemoff* MEMS devices are not readable on the claimed shutter as the *Lemoff* MEMS devices are not movable into and out off the gap and across a propagation path of the specific wavelength optical signal in said gap as defined in claim 1. As can be seen in Fig. 3 of *Lemoff*, the MEMS 51, 53 and 52 are always located outside the optical path (the phantom line).

3. With respect to independent claim 9, the Examiner is kindly asked to explain how *Lemoff* and *Espindola* teach or suggest the claimed dual collimator.

4. Still with respect to independent claim 9, Applicants respectfully submit that *Lemoff* does not teach or suggest any shutter member as detailed above at point 2.

5. Still with respect to independent claim 9, Applicants respectfully submit that *Lemoff* and *Espindola* do not teach or suggest the claim limitation of a shutter member arranged between the filter and the single collimator. According to the Examiner's rationale found in page 4, lines 9-12 of the Office Action, the filter and lens of *Lemoff* would be combined in a single GRIN lens collimator, i.e., in the Examiner's proposed combination, the filter is an integral part of the collimator. Thus, it is unclear how the Examiner's proposed combination could include a shutter member between the collimator and one of its integral parts.

6. With respect to claim 11, the Examiner is kindly asked to explain how *Lemoff* and *Espindola* teach or suggest the claimed air gap formed in an adhesive member. It might have been known in the art to use adhesive for coupling various optical elements. However, there is no evidence that it was known in the art to form an air gap in such adhesive coupling.

7. With respect to claim 13, the Examiner is kindly asked to explain how *Lemoff* and *Espindola* teach or suggest the specifically claimed structure of a fixing tube having opposite ends at which dual and single collimators are mounted, respectively.

8. With respect to claims 15 and 18, the Examiner is kindly asked to explain how *Lemoff* and *Espindola* teach or suggest the specifically claimed structure of a fixing tube having an opening through which the shutter member is moveable.

9. With respect to claims 16, 17, and 20, the Examiner's inherency argument is improper because it has failed to provide "a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis added). The Examiner's statement found in page 3, lines 6-7 from bottom of the Office Action is conclusory and evidentially unsupported.

In addition, it is not understood how an "inherent" U slot in the *Lemoff* MEMS 52, 53 can be considered as being formed between a lens (*Lemoff* at 51b) and a filter as recited in claims 16-17 and 20.

10. With respect to independent claim 19, Applicants respectfully submit that *Lemoff* fails to teach or disclose the claim limitation of a shutter member moveable into and out of a gap between the lens and an input end of a transmitting optical fiber. *See* claim 19 at lines 9-13. According to the Examiner, the lens is met by *Lemoff* at 51b and the transmitting optical fiber is met by *Lemoff* at 44a. *See* Office Action at page 2, lines 1-3 from bottom. As can be seen in Fig. 3 of *Lemoff*, there is no shutter member moveable into and out of the gap between lens 51b and transmitting optical fiber 44a.

The remaining claims are considered patentable at least for the reason(s) advanced with respect to their respective independent claim.

Each of the Examiner's rejections has been traversed. Accordingly, Applicants respectfully submit that all claims are now in condition for allowance. Early and favorable indication of allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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